
ORIGINAL ARTICLE

Pain, Pain Catastrophizing, and History of Intentional Overdoses and Attempted Suicide

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■ Abstract

Background: The management of pain patients with analgesics is challenging, with one of the risks being overdose with prescribed medications and death. In this study, we examined relationships between pain and pain catastrophizing, and past history of intentional overdoses and suicide attempts.

Method: Using a cross-sectional approach and a self-report survey methodology, we examined 239 consecutive internal medicine outpatients in the United States. We inquired about pain "today, over the past month," and "over the past year;" and assessed pain catastrophizing with the Pain Catastrophizing Scale (PCS), past histories of intentional overdoses, and suicide attempts.

Results: There were statistically significant relationships between all of the pain variables, as well as PCS scores, and history of intentional overdoses. There were also statistically significant relationships between all of the pain variables, as well as PCS scores, and history of suicide attempts.

Conclusions: Although we cannot discern causal relationships, findings indicate that patients with pain complaints and pain catastrophizing have a greater likelihood of having past histories of intentional overdoses and suicide attempts. We discuss the potential implications of these findings. ■

Key Words: pain, psychology, pain catastrophizing, suicide, suicide attempts, medication overdose, intentional

INTRODUCTION

The treatment of pain patients with analgesic medications is inherently challenging and complicated by the rising phenomenon of drug-related overdose deaths. To illustrate this latter phenomenon, a study in Virginia determined that between years 1997 and 2003, drug overdose deaths increased by 300%; the proportion of prescription opioids involved nearly doubled between 2000 and 2003.¹ In a study from the National Vital Statistics System, drug overdose deaths increased between years 1999 and 2004 by 62%, with an increase of 142% in the rate of opioid poisoning.² In a study from New Mexico, drug overdose deaths increased by 58% between 1998 and 2005, with a notable increase in deaths attributable to prescription opioids during this period.³ In a study from Oklahoma, unintentional prescription overdose deaths rose 7.34-fold between the time periods 1994–96 and 2004–06, with opioids being the leading pharmaceutical culprit.⁴ To underscore these findings, the Harvard Mental Health Letter explicitly emphasized a relationship between the prescription of analgesics, drug addiction, and fatal overdoses⁵—a relationship that has been confirmed and primarily attributed to the analgesics oxycodone, hydrocodone, and methadone.⁶

Given the rising concerns over prescription medications and overdose deaths, we examined potentially

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related relationships—the relationships between pain and pain catastrophizing, and the self-harm behaviors of intentional overdosing and attempting suicide. Some of these relationships have been previously examined. Specifically, Ratcliffe et al. examined and confirmed in a Canadian community sample relationships between several chronic pain conditions and suicidal ideation and suicide attempts.⁷ However, there are potential differences between treatment-seeking vs. nontreatment-seeking samples. In addition, to our knowledge, the variables of pain catastrophizing and intentional overdoses have not been previously studied, and no study has examined these variables in a clinical sample. We hypothesized that there would be a higher risk of intentional overdoses and suicide attempts among patients plagued with pain and/or among patients with over-perceptions of pain. If so, these individuals may be providing us with a “prequel” saga to subsequent overdose deaths with prescription analgesics.

METHODS

Participants

Potential participants in this study were men and women, ages 18 years or older, who were being seen at an outpatient internal medicine clinic for nonemergent medical care. The outpatient clinic is staffed by both residents and faculty in the department of internal medicine and is located in a mid-sized mid-western U.S. city. The majority of patients recruited for this study were seen by resident providers. We excluded individuals with compromising medical (e.g, debilitating pain), intellectual (e.g, mental retardation), cognitive (e.g, dementia), or psychiatric symptoms (e.g, psychotic) of a severity to preclude the candidate's ability to successfully complete a survey ($n = 13$). This exclusion process was informal and undertaken by the recruiter as patients registered for clinical service.

At the outset, 349 individuals were approached and 244 agreed to participate: a participation rate of 70%. As for the 105 individuals who did not participate, 68 refused outright, 13 appeared too distressed, 21 appeared too burdened (e.g, struggling with children), and 21 reported not wanting to commit the time. Of the 244 individuals who agreed to participate, 239 completed the items necessary for inclusion in analyses. Of these 239 respondents, 62.3% were women and 37.7% were men, ranging in age from 21 to 80 years ($M = 45.74$, $SD = 15.12$). Most participants were

White (76.2%); however, 20.5% of participants were African-American, 0.8% Asian, 1.7% Hispanic, and 0.8% “Other.” With regard to educational attainment, all but 2.1% had at least graduated high school, whereas 24.3% had earned at least a bachelors degree.

Procedure

During clinic hours, one of the authors (D.A.W.) positioned himself in the lobby of the internal medicine outpatient clinic, approached consecutive incoming patients following registration, and informally assessed exclusion criteria. With potential candidates, the recruiter reviewed the focus of the project (i.e, a study examining pain and past self-harm behaviors) and then invited each to participate. Each participant was asked to complete a 6-page anonymous survey, which took about 10 minutes. Surveys were completed onsite in the lobby, before appointments with providers. Participants were asked to place completed surveys into sealed envelopes and then into a collection box in the lobby of the clinic.

The survey consisted of 4 core sections. The first section was a demographic query. Using an author-developed assessment, the second section of the survey explored pain intensity at three specific time points: “today,” “over the past month,” and “over the past year.” For each point in time, respondents were presented with the numbers 0–10 positioned on a single line. Labels beneath the numbers were “No Pain” under the number 0, “Mild” under the numbers 1–3, “Moderate” under the numbers 4–6, and “Severe” under the numbers 7–10. Respondents were asked to circle the single number that best corresponded to their level of pain during that time period.

The third section of the survey assessed the catastrophizing of pain using the Pain Catastrophizing Scale (PCS).^{8–11} The PCS is a 13-item self-report measure that assesses catastrophic thoughts and feelings about pain. This measure has a 5-point Likert-style response scale (0 = not at all to 4 = all the time) and the scoring range is 0–52, with higher scores indicating higher levels of catastrophic thoughts and feelings about pain. The PCS has three underlying factors or dimensions of pain catastrophizing: Rumination (items 8, 9, 10, and 11); Magnification (items 6, 7 and 13); and Helplessness (items 1, 2, 3, 4, 5 and 12). With regard to validity, the PCS has been validated in both clinical and nonclinical populations.^{8–11} In the current study, Cronbach's alpha was .98 for the 13-item measure, .97 for the Rumination subscale, .88 for the Magnification subscale, and .96 for the Helplessness subscale.

The fourth section of the survey queried participants about past intentional overdoses and suicide attempts. Explicitly, with a yes/no response option, participants were asked: “Have you ever intentionally, or on purpose, overdosed?” and “Have you ever intentionally, or on purpose, attempted suicide?” Both items were listed under the heading, “Self-Harm.”

This project was reviewed and exempted by the institutional review boards of the sponsoring hospital and the local university. Survey completion was assumed to be implied consent, which was explained to participants on the cover page of the survey. Participants were advised to take the cover page for their records. Data were collected in November of 2012. There was no funding for this project.

RESULTS

Of the 239 respondents, 26 (10.9%) reported having attempted suicide and 20 (8.4%) reported having intentionally overdosed (16 of whom reported both). Comparisons between respondents with histories of overdose or attempted suicide and those without are presented in Table 1. Because scores on each of the 3 subscales of the PCS were very highly correlated with each other (all 3 correlations were 0.93) and with the total score (correlations ranged from 0.97 to 0.98), only the total PCS score was considered further.

DISCUSSION

In this study, we found statistically significant relationships between all pain ratings and the cognitive process of catastrophizing pain, and intentional overdoses and

past suicide attempts. While we do not know whether individuals who report overdoses and suicide attempts will eventually commit suicide and augment the prescription overdose death statistics, there appears to be an association between pain and pain perception, and a higher-than-expected rate of dangerous self-harm behavior.

What might explain these associations? There are a number of possibilities. First, some individuals with pain may have characterologically based difficulties with self-regulation and, as a result, have inherent difficulties regulating pain, thereby over-experiencing it. In support of this possibility, individuals with borderline personality disorder (BPD) are characterized by inherent difficulties with self-regulation. In addition, individuals with BPD experience high rates of substance misuse as well as chronic self-harm behavior, which may for some participants partially or fully explain the associations encountered in this study among the variables.

As another possibility, perhaps living with chronic pain, coupled with the over-perception of pain (i.e., pain catastrophizing), leads one to either seek moments of solace through intermittent excessive analgesic usage, resulting in intended overdoses, or to end the pain altogether, resulting in an intentional suicide.

A third possibility may be that some other major psychiatric disorder is mediating these variables, such as post-traumatic stress disorder (PTSD). PTSD is characterized by hypervigilance or excessive scrutiny of the environment. This feature may also apply to the excessive scrutiny of the internal environment, which could explain the over-assessment of pain. PTSD might also partially or fully account for drug misuse and intentional overdoses.

As a fourth possibility, perhaps the chronic use of analgesics, itself, predisposes to addiction, and findings are simply explained by an addiction model. However, this proposal would only address individuals with histories of intentional overdose, not suicide attempts.

However one explains these associations, either through a single theory or some combination of the preceding theories, the findings in this study indicate that pain and the over-perception of pain are associated with the self-harm behaviors of intentional overdoses and suicide attempts. Importantly, we do not know the temporal relationships between these variables. If these self-harm behaviors precede pain, then a personality disorder explanation or PTSD is more likely. If these self-harm behaviors follow the development of pain, then perhaps a direct pain or addiction model is more likely.

Table 1. Ratings of Pain and Scores on the Pain Catastrophizing Scale (PCS) as a Function of a History of Overdose ($n = 20$) or Attempted Suicide ($n = 26$)

Overdose or Attempted Suicide:	Yes M (SD)	No M (SD)	<i>F</i>	<i>P</i>
History of intentional drug overdose				
Rating of pain now	5.55 (2.46)	3.26 (2.83)	12.21	< 0.001
Rating of pain for past month	5.40 (2.52)	3.56 (2.83)	7.83	< 0.01
Rating of pain for past year	5.35 (2.25)	3.68 (2.83)	6.53	< 0.05
Total score on PCS	27.80 (11.77)	12.01 (12.46)	29.69	< 0.001
History of attempted suicide				
Rating of pain now	5.35 (2.68)	3.23 (2.81)	13.36	< 0.001
Rating of pain for past month	5.23 (3.00)	3.53 (2.78)	8.49	< 0.01
Rating of pain for past year	4.88 (2.42)	3.69 (2.85)	4.18	< 0.05
Total score on PCS	24.38 (13.64)	11.98 (12.44)	22.35	< 0.001

Note that nearly 11% of this sample had previously attempted suicide, which is an exceptionally high rate. This finding may be partially explained by the indigent nature of the clinic (i.e, for the year 2012, 23% of patients were insured through Medicare and 11% were self-pay) and the likely presence of corresponding mental health issues. In addition, the sample size is relatively older, and participants may have accrued more time to develop and experience pain as well as engage in various self-harm behaviors (mean age of 46).

This study has a number of potential limitations. First, pain is a highly subjective experience and based upon self-report. Indeed, all data in this study were self-report without any corroboration from other sources, such as the medical record. Second, some excluded participants may have altered findings had they participated. Third, we did not assess for broad baseline psychopathology, so we do not know the potential contributions of comorbid psychiatric phenomena such as mood and personality disorders. Fourth, the term “overdose” may have been misinterpreted by some respondents (i.e, excessive use of a given prescription, intentional suicide attempt). However, this behavior was labeled as a self-harm behavior in the survey. Fifth, these data are from a resident–provider clinic, and findings may not generalize to other types of clinical settings. Sixth, we cannot infer causal relationships among the study variables due to the cross-sectional nature of this study. Despite these potential limitations, the sample was clinical and reasonable in size, the study variables are relatively novel to the literature, and the findings are important in terms of the increasing concern about prescription drug overdoses (are these “prequel” findings?).

Future studies might tease out additional aspects of these relationships. For example, comorbid mental health diagnoses need to be examined, particularly with regard to major psychiatric disorders (e.g, PTSD) and personality disorders. Likewise, the temporal relationship between pain onset and self-harm behavior needs to

be determined. In many ways, this is a pilot study, one that is attempting to discern potential antecedents to prescription overdose deaths.

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